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In the first version, a male person (Shinarikyu) and a female person (Amamikyu) descended from Heaven. Amamikyu without sexual intercourse gave birth to three children: the first son became the first ruler; the first daughter, the first priestess; and the second son, the first farmer.

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In the second version, the male and female deities gave birth to a child. "They carried stones and earth to the edge of the sea and planted trees to keep back the waves." Mountains and forests thus made, "mankind sprung up." Knowledge was attained and one person divided mankind into classes. This man, Tenteishi, had five children: Tensonshi, the first son and first ruler; the second son, the first noble (ansu); the third son, the first farmer. The eldest daughter became the first kikoe-oh-gin, who later headed the institutionalized noro religious system. The second daughter became the first priestess (noro).

The dynasty established by Tensonshi, according to tradition, lasted for twenty-five generations, 17,802 years, or until 1187 A. D. During this period, Okinawa was divided into three districts (magiri), Kunchan in the north, Nakagami in the center and Shimajiri in the south, divisions which remain to this day.⁴ The districts were divided into mura, or townships. Wheat and millet were raised at Kutaka /a name of a magiri/ and rice was grown at Chinen and Tamagusuku.⁵ There is reason to believe that Tensonshi's dynasty had its greatest control over what would now be the area of Naha, Shuri, Tamagusuku township, and the Chinen peninsula area.

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In both myths, a female priesthood, as Spencer points out, is placed at the very beginning of Ryukyuan history. A king, lesser nobles, a female priesthood, and farmers were the basis of the culture.

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Events of the Early Historical Period

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Not enough is known of the early historical contacts between the Great Loochoo and the Chinese and Japanese to warrant any conclusions regarding influences which these countries could have exerted.

Chinese punitive expeditions took place in the early seventh century A. D., but the consensus of opinion is that the invasion of Great Loochoo resulted in no prolonged cultural contact or influence. Some Japanese

[TEXT CONTINUES ON P. 29--Analyst]

4 Chamberlain, The Luchu Islands and their inhabitants, as cited, 306.

5 Leavenworth, Charles S. The Loochoo islands, 15. Quotation is from the manuscript history translated by Leavenworth, *ibid*, 77.

The village is one of a series of settlements in a long narrow valley, on a limestone plain, bordered on the east by a steep ridge, up to 300 feet in elevation and running in a northwest and southeast direction, which divides the valley from the sea. On these cliff like formations, large outcrops are covered with shrubs and miscanthus grass. Lanes and roads lead from the valley floor to the summits of these hills, where villagers collect their firewood and grass for roof thatch. On the rocky, steep slopes of this seaward ridge, above the line of cultivation, is the tomb area. Precipitous and stony hills prevent cultivation, but occasionally a sharp tongue of land reaches far up the slope, its end protected from the rains and wash by a short stone fence.

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Between Oushichan and Hanashiro village, there is a bridge over a small stream, its upstream course obscured by its dispersion in the rice fields. The dirt road, gradually ascending, cuts through the main rice growing area of the village, on a gentle slope, reflected in the bench cultivation of the rice fields. Here and there are large rocks and stony outcrops, with an occasional scrub pine, cycad, or a covering of miscanthus. Cultivation goes around these large stones.

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The road, about one-fourth of a mile from the bridge, soon leads into what looks like, from a distance, a densely wooded area. This is the settlement.

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With the exception of the rough stony land of the limestone mountains and steep slopes, the soils of the area are the Okinawa clay loams and the Chinen stony clays lying on the limestone plains. The farm and village area takes up approximately 427 acres, of which 257 are in gently sloping Okinawa clay loams, a deep, well drained, neutral to slightly acid and very fertile soil. Another five acres is of the same type but these are in slopes, of a gradient ranging from 8-15%. There are 80 acres in gently sloping Shuri clays, shallow, moderately fertile, an olive colored, crumbly, calcareous clay; another 35 acres in the Awase clays, deep fertile, crumbly, calcareous clay of olive-gray color, and 14 acres of rough stony land.

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The hillsides and the summits are free of densely growing trees and shrubs, and the lowlands are given over to cultivation. There are no groves of trees to protect the crops from typhoons. The trees and the protection they give are confined to the village. This is typical of many villages of southern Okinawa, where the hills and mountains have few trees, and dense growths are associated with habitation.

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Inside the village, winding lanes branch off the main dirt road. The older houses are on the north side of the road. On the opposite side, the houses, newer or rebuilt since the war, adjoin the cultivated area. In the older section, the dense shrubbery, the tree lined lanes, broken occasionally by stone fences, wind through the village with footpaths branching off, sometimes past an open field, a reminder of a failure to rebuild after the war. On the northern outskirts is the village office, its gong in the yard, the open field, a playground for the children.

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off a main road or village lane. (5) Forest lands (saurin). This is an important classification in Matsuda, but of minor significance in Hanashiro and Minatogawa. In the latter villages forest land is not recognisable because so many of the trees have been destroyed. In general, forest lands are community owned. (6) Shelter belts or groves of trees along the seashore or on crests of hills for typhoon protection. These are known as bōfuri. The trees are distinct from the forest lands; often they stand in isolated groves. In the south trees for typhoon shelters are confined to the settled area. There are no large groves surrounding and protecting the whole cultivated countryside. (7) Religious sites (haisho). These are small in area, the sites of buildings devoted to the local tutelary deities (ujigami). (8) The village community property (koyochi). This may include the village office site and school grounds. (9) A miscellaneous classification (sashuchi). This is also public property, including vegetable plots, small public squares, very small parks, ponds, road meeting places and the like. These combined areas are usually small. (10) In the Gushichan area, there is one further classification: destroyed land (tsuborechi). This is land in the war area which has not been or cannot be restored. The pieces are not large. During the war a bulldozer may have made a road out of this land; it may be filled with stones or the shallow top soil of the land may have been scraped off in leveling for an army post or camp.

The bases for grading land within each class are different. In Gushichan township, the main consideration in grading rice land is the availability of water. First class rice land is where the water is. In this township, there are seven grades of rice land, although any one village may have only four or five. The first five grades in the township are rice lands with two yields a year. Grades one through five are determined by the yield of the plot, through past experience. Grades six and seven are one crop areas. The distinctions between the grades can be seen in the following table:

Grade of Rice Land	Expected Yield in Koku per Cho
1	24
2	18
3	15
4	12
5	7.5
6	6.7
7	6.0

A koku is 5.12 US dry bushels. A chō is 3000 tsubo, about 2.45 acres.

If there is a drought in any year, the grades of land are not changed the following year, but the estimate of expected yield may

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243 be lowered. If the rainfall is unusually low, the estimated yields may even be cut in half. Grade differences are also shown by the Gushichan tax table on rice land:

Class	Rate in Yen (per <u>taube</u>)
1	37
2	34
3	31
4	28
5	25
6	22
7	19

[651]
311 The grading of dry crop land is not so simple because various crops can be grown and there are difficulties in making equivalences of yields. The grading is more subjective and vague, with gradations based on the judgment of the land committee. It might seem that the grades of dry crop land based on subjective judgment would be difficult to agree upon. This is not the case. Farmers who have lived in the village all their lives, and who as children remembered the experience of their fathers, know their own and their neighbors' land well. Representatives from the village who suggest the grades are chosen by the farmers for their honesty, skill in agriculture, and knowledge of the land.

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133 Depth of the soil, flatness, degree of stoniness and accessibility are the most important criteria. The first three of these follow naturally from conditions widespread in Okinawa. There often is very little topsoil. One can observe cuts in roads or sharp declivities which show soils only an inch or two deep before meeting the consolidated or unconsolidated rock below. The hilly and mountainous nature of the island enforces cultivation on slopes, summits, and rolling hills. Stoniness, whether large boulders or small pebbles or both is common. One of the occupations of the old in Minatogawa and Nagamo is to convert stony to arable land by tediously picking up the stones and throwing them into piles for subsequent sale in road building. But often the boulders are so large that cultivation must curve around them. These conditions can be seen to good advantage in Nagamo. In Manashiro, the soils are flatter, less stony, and deeper. Matsuda has wide areas of poor shallow and stony soils. [887]
[241] First class hatake land, then, is flat, deep, with few or no stones, and suitable either for sugar or the sweet potato and the various common vegetables.

311 With this standard of first class hatake land, the other grades are judged, mostly by inspection and through consultation and agreement by the committee. In the Gushichan township, there are ten such grades of hatake land, the tenth grade being so poor that it is virtually genya land. In dry crop land, probably the most important

HANASHIRO

TENTH MONTH
(Oct 30-Nov 28)

MATSUDA

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Possible beginning of second rice harvest, though this is early. Planting rice in seed bed. Sow sweet potato slips.

Sow peas (andō-mame) and beans. Plant sweet potato slips if rain. Sow giant radish (daikon), tomatoes, barley. Weeding of radishes, and vegetables planted previous month until the 25th. Rice cutting begins.

ELEVENTH MONTH
(Nov 29-Dec 27)

Continuation of the rice harvest. Threshing and milling. Planting of sugar cane, slantwise. Sow cabbage seed. Rice seed planting begins, or continues if begun in the 10th month.

Rice cutting and harvest. Threshing and milling. Rice fields dug up. Preparation of new fields.

TWELFTH MONTH
(Dec 28-Jan 26)

Sugar making. Sow Irish potatoes (bareisho) but in small quantities

Continue digging up rice fields. Rice sown in seed beds after seed testing. Sugar making may begin.

YEAR ROUND ACTIVITIES

Sweet Potato Planting, Transplanting and Harvesting continues throughout the year, depending on time and distribution of rainfall.

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Rice Cultivation

843 Growing rice is a most exacting task. The period from the time the seed bed is prepared until the final milling is one of tedious work and continuous apprehension. The reaction of Okinawan farmers to rice cultivation perhaps was best summed up by a Matsuda farmer who said, "Everyone dislikes the work, but rice is delicious."

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[262] Assuming that the field is already in existence, the cultivation of rice may be divided into the following stages: (1) preparation and laying out of the seed bed, (2) selection of the seed, (3) transplanting

of the young shoots from the seed bed to the paddy field, (4) the care of rice until its maturity, (5) the harvest, (6) threshing, milling, and hulling, (7) the uses of rice and its byproducts, and (8) types and preferences of rice. 243

The preparation and laying out of the seed bed. A seed bed (naidoko) is a plot of first grade land, well watered, specially chosen for this purpose. It is very small in area, often around 15 tsubo, or about 540 square feet. The seed bed also may be a portion of a larger field set apart for seedlings. In this case, small boundaries are made by earthen walls, apertures left for water to flow in and out, and the little plot is then prepared for the seedlings. Considerable care is taken in the preparation of the seed bed. The soil here must be finer and more carefully worked than the paddy field, since it receives the rice seed, not the seedlings. The soil is painstakingly worked, and, with the water added, becomes a thick smooth mud. Commercial fertilizers, composts, and less commonly, night soil are then applied. After the seed is sown, water, perhaps 2 1/2 inches deep is allowed in the bed. During germination, a slow steady irrigation, a washing by new water is maintained by controlling the water trickling in and out of the openings on either side of the field. [311] [34] [312]

The selection of the seed. The seed is taken from the harvest immediately preceding. After fall harvest around December, the rice fields are dug to prepare for the new planting in January or February. The seed used from this crop is tested in one of two ways. 243 242

In Matsuda, it is common for a farmer to fetch a bucketful of sea water. To this he adds a little more salt until the density of the water is sufficient to float an egg. The rice seed is put in the water. The light and undesirable grains rise to the surface. This salt water density method is apparently very old and originally came from China. [197]

Another method, based on the same assumption that the lighter grains make undesirable seed, is used in both villages. The rice is tossed in a round, shallow, winnowing basket, and the breeze carries off the undesirable seeds to the chickens. In the summer planting the seed, after this testing, is ready to sow. In the fall and winter planting, there is one further step. After the seed has been selected by the winnowing or the density method, it is soaked in water for four or five days. Following this, it is removed from the water, put in a tub, and covered. Warm water is added, the mixture is stirred and allowed to stand for another four or five days. The water is then poured off and seed has begun to germinate. The seedlings can now be planted in the seed bed.

Transplanting the young shoots from the seed bed to the paddy field. In the meantime, the paddy fields have been prepared. After the harvest, the field is drained. Small clumps of cropped rice stalks stick up two or three inches where they have been cut with the small pickle or bill knife. This stubble is turned over either by hoeing, the usual way, or 243

243 by plowing.

[407] There is water on the land when it is dug and harrowed, but it is not flooded. Not all rice land is harrowed. If it is not harrowed, the same result is accomplished by further hoeing. The harrow (magma in Japanese, maga in Okinawan) is partly a home made tool and looks like a large clumsily constructed rake. Essentially it is a piece of timber with a row of strong spikes. This timber ordinarily is made of pine, but other woods may be used. Twelve nails, spaced at about two inch intervals, are driven into the board. These nails or spikes, about 8 sun (almost 10 inches long), square at the head, and with a sharp point, are made by a blacksmith for about Yen 20 each. The harrow is drawn by cattle; two shafts, with a yoke over the animal's head complete the simple implement. The plow is used in the preparation of the field, but far more commonly, the work is done with a hoe.

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In the fall and winter planting of rice, the seedlings remain in the seed bed for about 40 days. In the summer, the period is only 20 days and may be less. The winter shoots are from 7-8 inches long, the summer shoots from 4-7 inches. The length is important, for if the seedlings are too long, losses in transplanting will, according to Hanashiro farmers, increase to almost half. In rare instances, due to adverse conditions, seedlings in the seed bed reach 15-20 inches in length. The losses here are said to be considerable in transplanting.

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The hoeing or the plowing and harrowing of a field is almost exclusively done by men. It is tiring, uncomfortable, and heavy work. It is much more common to see women hoeing the dry crop land. But transplanting is done by men, women, and the older children. A handful of seedlings in the bed is pulled out and bound with straw, grass, or a rush. There is a knack in pulling these out. They must be jerked quickly, but dexterously to avoid root damage. The bundle is tossed either into a central place or into the paddy field to be planted, if it is adjoining. In the latter case, the bunches are tossed to various parts of the paddy.

The seedlings are generally set out in rows. For this purpose, a string with small markers like buttons (shirushi) is used. These are 7 sun (about 8.4 inches) apart. Both the rows and the hills are 7 sun apart. Differences between rows and hills may vary considerably. In these localities, the distances were generally the same. The string is stretched from one end of the row to the other. Each seedling is planted at the interval indicated by the marker on the string. This method of planting is not universal. When there is little time, the seedlings might be scatter planted.

Another method of obtaining the checker-board pattern is by means of a home made hexagonal frame, the waku (literally, a reel or a frame). Each of the six sides is divided into nine squares, 7 sun on the side. The overall length is over six feet. The frame is set along the outside border, or at any desired starting point. When in place, the

bottom will imprint nine squares on the wet soil, and as it is turned another nine will be imprinted so that when continued the field is laid out in tiny squares. Three or four seedlings are planted on the corners of the square made by the waku.

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Men operate the frame. As they turn it, making the square pattern on the damp soil, women follow behind with the seedlings. The frame has been in use in Matsuda for about fifteen years. An Okinawan agricultural school student is said to have invented it. It was not used in the southern villages studied, an interesting sidelight on the slowness of innovation even on a small island like Okinawa, for many farmers in the south expressed surprise at its use and had not heard of it. The device is helpful to those with large plots. In Matsuda, there are not many of these frames, but borrowing is frequent.

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In contrast with recent introductions, such as the universal treadle thresher, the frame seems to be confined to one geographic area. The reason for this may be that the use of the thresher was actively encouraged by the Japanese as a successful time and labor saving device, while the frame was not similarly publicized.

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Another method, a more traditional one, is to use a piece of wood the same length as the waku with seven little knobs and the two ends to give the nine spaces. This is the jiyopi. A piece of string stretched from one end of the field to the other is used to get a straight line along a row. When the planting has taken place along one row, the jiyopi is used to measure off one space between rows, the guide line is moved over and the operation repeated. This achieves the same purpose as the frame or the string with the markers. Men are more likely to handle these operations, the women following along with the transplanting. But the division of labor is by no means hard and fast.

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Care of rice until its maturity. Rice set out in squares is easier to cultivate, weed, and harvest. During its growth, it will be necessary occasionally to loosen the soil or to break up clods which escaped the initial working. There may be some temporary drainage of water off the fields at these times.

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Weeding rice is usually done by hand, though once in a while a farmer has a hand cultivator. Weeding the rice field is an unrelenting job which is done about once a week. More attention is given to this task when the plants are younger. Weeding is worked in with other daily chores, and all members of the family may participate.

The rice is now allowed to grow with the hope that strong winds or a typhoon will not blow over the slender shoots or submerge them. If the rice is submerged when the shoots are still fairly young, they will gradually right themselves. Farmers say that attempting to upright the plants by hand will not work. The quality of rice once submerged is poor and sometimes half the rice in the plot is lost. If the submersion occurs when the plants are near maturity and the stalks are 20 or 25

243 inches high, the bottom of the paddy becomes a tangled mass. Farmers walk disconsolately away from a field like this, often without even attempting to harvest the crop. The seeds once soaked will produce inferior rice. In this case, the farmer may turn the whole crop under or salvage some for pig food. The growing of rice is one long gamble with the wind and with typhoons, and there is seldom a year in which some rice is not destroyed.

[221] The harvest. The cutting of rice at harvest time, July and November in the western calendar, is done in a uniform manner. (Harvest times may vary somewhat from place to place). A bunch of the long stalks is grasped in one hand and cut off with the small sickle. A stubble of a few inches is left in the field. The sheaves are tied up with a piece of rice straw and thrown in piles. The commonest and most convenient way of carrying the sheaves from the field is to tie several together. A large bundle of these is carried on either end of a pole which rests on the shoulder. The ends of the pole are cut like tenons and stuck in the bundles below the binding. The rice is carried to the courtyard to be threshed. If necessary, it will be allowed to dry for a few days.

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407 Threshing, hulling, and milling. Rice is threshed either in the courtyard of the home or in a flat place near the house. During rice harvest, the threshing machines can be heard all over the village, the noise suggesting the sounds of cars on a railroad track, heard from a distance. The device now universally used for threshing rice is the dakkoki.

This has a foot treadle, similar to an old fashioned sewing machine. Working the treadle up and down causes a drum, set at about waist length, to revolve. This drum has a series of wires set in rows and bent over, appearing like large staples. These staples are parallel with the line of rotation of the drum.

A conveniently handled bunch of stalks (wara) is held on the revolving drum, the rice seeds touch the staples, which knock the kernels off. They drop to the floor of the device. Often the top has a canvas cover to catch the flying rice kernels and the machine is set in the middle of a large piece of canvas so that the grain can easily be recovered. Both men and women do this work, although women seem to do more of it. They are free to work while at home, alternating the task with other chores. They keep up with the men and the elder children who are carrying the rice bundles in from the fields. After threshing, rice straw is thrown aside. It has many subsequent uses.

[177] The dakkoki, an introduction from Japan, is new in Okinawa. In Hanashiro it has been used scarcely 15 years. Prior to this, more primitive methods were used which can still be observed in Matsuda today. These old methods are no longer important, but they are of interest because they were used, instead of the treadle thresher, up to pre-war times.

One of these, the shimba (ninihi in Okinawan) is essentially a concave forked piece of metal set on a frame, which in turn rests on four props set up in sawbuck fashion. The rice sheaves are drawn through the teeth, causing the kernels to drop below. The sawbuck may be any desired height. Usually the top of the fork is waist level. The only significance of the shimba today is that it provides diversion and occupation for the old women, many of whom are too weak or too unsteady to operate the treadle thrasher. The same is true of an even simpler device for threshing. Two short pieces of bamboo, or any piece of round wood, a little longer and with a slightly greater diameter than a pair of chopsticks, are loosely tied together on one end with straw or a strong blade of grass. The tied ends of the two sticks are held in the right hand, leaving the free ends to strip off the rice kernels from the straw. This labor is done by very old women. Age is no deterrent to work as long as people are able to get around. But, as in the south, the treadle thrasher is universally used. This device was widely distributed by the Japanese agricultural specialists of the government throughout the empire in the years immediately before the war. In Matsuda, it is also thought to be about 15 years since its introduction.

As in Japan, from which the terms were borrowed, rice in various stages of cultivation and processing is known by different names. Rice in the hull is momoi; unpolished rice is genmai, and polished rice is hakumai. Rice stalks are known as wara.

Hulling and polishing rice by machinery are also new in Okinawan villages. In Hanashiro, those machines driven by an open belt are about ten years old. A hand mill, the shirushi, to be described shortly, was in general use for polishing rice up to 1940.

At present everyone, no matter how poor, pays for hulling and polishing of his rice. The mill owner in Hanashiro estimated that the machinery processed in ten minutes the amount of rice that formerly took a day to hull and polish by hand. Poor families do not try to effect savings by hand work. They pay the fee, sell the polished rice, and eat sweet potatoes.

Unpolished rice is disliked and is never eaten. It is described as hard and bitter in taste. The machinery in a rice mill varies from place to place in quality and modernity. The mill (seimaisho) has two machines: a hulling machine (momitsuriki) and a polishing machine (seimaiki). One simple type of a hulling machine is an endless chain type of mechanism. The rice is put in little buckets on the chain which carry it to rubber layers. As the rice is forced through the layers, the hulls are cracked and pinched off, and are then blown out on a pile in back. After being hulled, the rice goes through the shaft of the milling machine. The shaft housing is grooved. As the shaft revolves, it polishes the rice which is going through it. The shaft also gets heated, and this makes the polishing easier. In the older machine in Hanashiro, the rice was put through the shaft ten times

Rice may also be polished by the use of rude wooden mallets. These have a handle about 3 feet long and a head about 1 1/2 feet long. Rice is placed in a mortar with straw on top. It is pounded, often by two or three women swinging alternately. After the hulls are removed, the rice is winnowed, and put back in the mortar until a rough polish is secured. 252 [412]

Uses of rice. Every part of the rice plant has a use. The stubble, left in the ground, becomes a part of next season's fertilizer. The chaff and waste dust (nuka) is saved for pigs, cows, and other domestic animals. The hulls often are used for fertilizer, before or after burning. Rice straw has a variety of uses. The most frequent and important of these is for making rope. 824

After threshing, the straw is dried two or three days. Three or four stalks of about the same length are taken and rolled between the palms. The lower palm, usually the left, is open and up. The right palm rolls the straw into a twist. As the rope grows, new stalks are inserted one at a time, and, when needed, a new length of straw is added. This is not a strong rope, but it has a variety of uses, such as tying down the grass thatch to the roof poles, children's swings, and clothes lines. Mats and pads shaped like a life saver and used to set the sugar pots on after the sugar has been boiled, are made out of rice straw. Another use is in the making of the Eda (Okinawan). This is a mesh about one foot wide and two feet long. There are loops on each corner. The end of a pole may be inserted in these loops when gathered together. The pole is carried over the shoulder, and sweet potatoes, straw, or other articles may be easily transported. Simple brooms without a handle, little more than a bunch of straw tied together in three places are also made of rice straw. Twisting and braiding rice straw is likely to be rainy day work. These articles are most often made twice in the year, corresponding with the harvests. [283] [285] [482] [412]

At typhoon times, if rice is not completely destroyed, the damaged rice may be used for pig food. The preparation of this rice is women's work. The rice is put in a mortar and pounded with a mallet in the manner already described, although a single operator usually does the work. [731] [231] [462]

Types and preferences. As a general rule, the selection of varieties of rice for planting depends on taste, the nature of the soils, and individual judgment of the expected yield of each type. In Matsuda, it is estimated that about one half of the rice is the Formosan variety, Taichu 65 (Taichu rokujugo), in Okinawa known as horai. Another variety, Munigani 11 (Munigani ichigo) represents about one-fourth of the crop. Hochigone (akaho) takes up about another one-fourth. This glutinous rice has a brown reddish rust colored kernel and is used for rice cakes. A fourth variety, horai-nochimai, is also well liked. No black rice is grown here. 243 • [242]

In addition to these varieties, cultivated locally, imported rice is distributed through the import stores. These rices generally are from Egypt, Siam, and Burma. They are not well liked and are considered to be tough (katai). Whether this is because the variety itself is disliked or because the imports were of a poor quality is hard to say, but Egyptian, Siamese, and Burmese rice are unfavorably compared with Japanese, Formosan, or the locally grown products. Okinawans are very sensitive to the types of rice. There is no such thing as "rice." Long habituation and fondness for special kinds have induced tastes and preferences which each villager is quick to express.

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In Hamashiro, the main type of rice planted is also the Taichu 65, a variety which originated in Formosa, and is generally preferred. The red variety, mochigome, does not do well here, according to local farmers, and just a little is grown. Mochigome (literally, rice-cake rice) is used in making the doughy and gummy rice cakes.

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The Sweet Potato

The cultivation of the sweet potato (satsuma imo) is a much simpler undertaking than rice culture. Fields are prepared by hand hoeing. The plow and the harrow are not used. In sweet potato cultivation, seed potatoes are first planted in a small plot. This furnishes slips or transplants for other fields. Slips are multiplied by using the tops of one field to plant another. Propagation thus is by clones, and this vegetatively reproduced plant is the mainstay of the diet.

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The potato seed bed, well hoed and fertilized, is generally planted in the spring. The tops to be used as slips (kasura) are cut off and planted in rows. Practice has brought deftness in this transplanting. A small amount of soil is lifted up by the spatula, (here), and held so that an opening rather than a hole appears. The slip is shoved into the aperture and quickly pressed down by the left heel, as the farmer moves to the next planting.⁵ Few tools are used in the cultivation of the sweet potato. Only the hoe and the spatula are really needed. Occasionally one finds a special hoe with a sharp angle between the blade and handle or a heart shaped hoe with a long handle. In the Hamashiro and Nagamo areas, the solid bladed hoe is the commonest tool. Two and three pronged hoes are less often used because of the hardness of the soil.

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The cultivation of the sweet potato, as we have said, is a year round operation, though planting may slacken off during the winter months.

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5 Methods of cultivation have changed little in the past 100 years. The same operation is described in Hawks, Parry's expedition to Japan, II, 31-32.

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Taira: An Okinawan Village 875
the community is dispersed. In the outlying parts, as far as 2 miles 361
from the center (see map 1), the houses are scattered between the pad-
dies or farm lands in sections which form subvillages or wards. As
mentioned above, settlers from the south took up residence in these
areas. Recently families from the main village have also moved to the
more remote parts of the community, such as Udenaha, because they
can reach their fields more conveniently. Although the name Taira [107]
refers to the political unit of main village and outlying parts, includ-
ing Udenaha and Izena, most references in this study pertain only to
the central community. Its 60 households, with about 330 individuals, [162]
form the primary social unit from which the sample of 24 children was [124]
chosen.

Central Taira nestles along the inner shore of Taira Bay, which 361
opens into the Pacific Ocean. At this point the median range moun- 133
tains recede from the coastline. Behind the village, rice paddies spread [242]
in a crazed pattern at the bottom and on the terraced sides of several
valleys which are separated from each other by sparsely wooded hills.
Here and there the red earth of an eroded section shows like a scab
through the green slopes.

In traveling by road from the south, most people choose the highway [49]
along the East China Sea coast, which is connected with the road which
crosses the island. Higashi township is entered through a low saddle in
the mountains which separate the two coastlines. To the right and left
begins Taira's forest. Central Taira is reached through a winding lane
bordered by pine trees. To the left the view opens into one of the neatly
cultivated rice fields, backed by the hills on whose flat tops and ter-
raced sides village people cultivate their farm lands.

The central village itself lies on a sand bluff, separating the valley 361
from the ocean, so that there is a slight drop toward both sides (see
map 2). The main road runs the length of the village. Except for the
thoroughfare, which is dirt and gravel, the side roads are not surfaced, [363]
and after heavy rains puddles form and remain for more than a day,
to the delight of children who play in them.

When Taira was destroyed during World War II, along with its 363
houses went much of the foliage which once served as a windbreak. A 137
few fukugi trees * line the main street, and hibiscus hedges here and 727
there hide some of the houses from a first inspection. There are bushes
around the edges of the village.

The war-time destruction is hardly apparent on a first walk through 36
the village. Along the main street, lined by houses, one finds the rice
mill, a substantial new building of concrete and wood, the police sta-

* A small- to medium-sized evergreen tree with a narrow, upright, very dark
green crown of leaves.

990 Six Cultures: Studies of Child Rearing

512 is more likely that the majority of adults have to be satisfied with six
513 and a half hours.

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◆

Chapter 3

Basic Economy

INTRODUCTION

241 Taira depends on its fields and forests for a living. Rice and the sweet
433 potato are the principle staple crops; wheat, beans, and vegetables are
additional subsistence crops. Firewood and building materials, sugar,
pineapple, and silk are main sources of cash. Tea is raised for home
consumption.

311 Since the few rivers around Taira are short and the valleys narrow,
[43] the area available for wet rice cultivation is limited. Farm land for
[44] sweet potatoes is also not too abundant in this mountainous region and
[44] is located either on the gently sloped hills or on a few plateaus between
valleys. Here and there it rises on skillfully terraced steps along the
steep sides of mountains.

311 The size of land holdings and the quality of soil partly determine
423 whether a family is able to grow additional cash crops or merely sub-
241 sist. The average holding for each family is about 5 acres of rice land
and 6 acres of other farming land. Yet it is important to note that the
[433] range and quality of this land vary widely. Some families own only
1 1/2 acres of rice land and an acre of other farm land, while others own
as much as 11 acres of rice land and 12 acres of other farm land; good
rice paddies produce three times the quantity of poor ones and are wet
enough to allow for two crops per year. Of the 141 families questioned,
[51] only 15 grew enough rice to be self-sufficient; 123 had to buy extra
[433] rice, and only two families raised a surplus for sale. All families grew
enough vegetables for home use, and only 18 bought sweet potatoes.
Sixty families grew a surplus of vegetables and 16 a surplus of sweet

potatoes.

Taira: An Okinawan Village 391

But actually no family is entirely self-sufficient, for each needs to purchase foodstuff as well as ready-made clothes, manufactured mostly in Japan, more substantial building materials, such as better grades of wood, tiles, and cement, tobacco, alcoholic beverages, sweets, toilet articles, some medical supplies, and other luxuries. Farmers buy their tools; students their books and writing materials. Finally, cash is needed to pay taxes. 433 438

In addition to the utilization of sugar, pineapple, firewood, and building materials for cash, Tairans also raise pigs for sale to slaughter houses, and some families derive an income from raising silkworms and producing tea. Fishermen sell fish inside and outside the village, and a small group of people are salaried workers or have an income from specialized services. [231]

Village leaders fear dependence on rapidly dwindling forest resources, still the main source of ready cash. They realize that the present modest living conditions of all families could be much improved if Tairans concentrated on increasing the cultivation of subsistence crops and farmed more intensively to raise cash crops. Most people lack this insight, however, and live on a day-to-day basis without much thought of the future. This is an island-wide problem which has the attention of central government agencies, and a great deal of educational propaganda comes to the village through government channels. 433 241 [313] [185] [654]

AGRICULTURE

The productivity of the land varies not only with its quality but also with the industriousness of the owners. Farmers who show foresight, those who seem to be under less pressure for immediate cash, take off more time from forest work to cultivate fields during planting season. The village headman and council members remind everybody during village meetings and informal discussions that work in the fields should not be neglected. With the approval of the whole community, the first and 15th of each lunar month have been set aside for farming. On these two days it is forbidden to go to the forests to cut wood. Such agreements are usually observed (as a rule), and they help to achieve their purpose but are not completely effective. 241 185 [433] [623] [313]

Rice is planted and harvested twice a year. The first rice is prepared in January when seeds are put into special beds where they are left to grow into young shoots until March. Until about 30 years ago it was said that all people seeded rice on the same day while prayers were 243 [782] [793]

- 243 offered at the village shrine by the priestess. Today key agricultural
[782] events are still marked by small ceremonies in which the priestess be-
[793] seesches or thanks the gods, but the actual day for planting is deter-
mined by weather and the condition of seed.

[476] When the rice is transplanted in March, the whole family spends long hours in the paddy. Then the paddies swarm with people; some prepare the soil by spreading fertilizer, others stand in the ooze to set the seedlings. Transplanting is done by mutual assistance groups, which will be discussed later in this chapter. They guarantee everyone a sufficient number of helping hands during the painstaking, rapid work, which has to be finished within a limited time. In a few days the whole paddy area suddenly turns from brown into the tender green of the young shoots. Once planted, intermittent weeding is all the care that is needed.

- [261] In July the rice turns brown and is ready for harvest. This is an event of joy for the whole village, for young rice is most delicious and
[857] loved by everyone. By then vacations have started, so that school-children can help to cut rice and carry bundles to the spot where it is threshed in treadle-type machines, located either near the field or behind one's house. As soon as the rice is threshed, the grain is carried to a place in the village where the wind blows freely. There a woman holds a flat winnowing basket filled with grain at an angle to let the breeze separate the chaff from the grain. The first rice is cut by men and offered at the family shrine before the whole family eats a specially
[782] prepared gruel. Rice is usually stored in one or two oil drums in the
[264] kitchen-side corner of the front room. Better houses have a metal-lined
[251] storeroom. Once a week a supply is taken to the miller to be hulled
[256] and polished.

Those whose fields are sufficiently wet plant a second crop, and the cycle is repeated once more in midsummer, with the second harvest falling in late December.

- 244 Sweet potatoes can be planted throughout the greater part of the year if the soil is not too dry. They take from five to seven months to grow to full size. Although less popular than rice, no part of the plant is wasted. The large tubers are consumed, the small ones are usually
[262] fed to the pigs; the young leaves are used as vegetables, the older ones
[231] cooked into pig food. Slips are cut and used for planting a new crop.

The preferred variety of potato (*tadushi imu*) is grown in the dry paddies during the second rice season. To plant this potato, the soil must be piled up to form a long, narrow, flat-topped mound. One of the hardest jobs for farmers, this is done by men in the humid heat of a midsummer day. Women set the slips after the earth has been moved.
[251] These potatoes are the only variety which are thought to improve with

Taira: An Okinawan Village 393

storing and are kept under the house or on a special shelf on the rafters.

Onions, giant radishes, beans, and cabbages are also raised on farm lands. Night soil is rarely used for such vegetables nowadays but is still used on potatoes. Several of these vegetables as well as others are raised by women in small "home-garden" plots.

The hardest working period during the year is in July and August. Within a few weeks after the rice harvest, the soil must be made ready for the second rice crop or the soil must be prepared for dry paddy potatoes. This is also the time for planting the chief sugar crop. All this takes place during the hottest time of the year, when efficiency is greatly reduced by heat and humidity.

Sugar harvest and processing fall in the period between January and March. One field after another is harvested by the owners after arrangements have been made for a date when the cane can be processed. Such arrangements are made with the director of the Taira cooperative, who supervises operations of the sugar mill which is owned by the cooperative. The whole family helps on the day of processing. Women carry bundles of branches and light firewood to heat the kettles. The operation requires the help of someone to feed cane into the small diesel engine driven press, some to carry the pulp away, and others to watch the kettles in which extracted juice is boiled down to molasses. Finally, a few persons stir the brown residue in wide, open pots until it becomes staled. Then it is put into tubs that hold about 132 pounds.

The agricultural market for cash crops was totally disrupted at the end of World War II. There was no immediate outlet for sugar products; crops had been destroyed or neglected, and the sugar mill was demolished in the fighting. But by this time most people were too satisfied with the great returns from forest work to invest much time and energy in a crop which takes a year and a half to show any material results. Nevertheless, sugar was the first crop to find a market again.

Pineapple, introduced recently in Taira, has a promising future. Tea is still grown in small quantities, but few families grow more than they need for their own use, although it is a good potential cash crop for this area.

ANIMAL HUSBANDRY

Raising pigs is an important source of cash income for all households in the village. Even the poorest families own at least one, but few families have more than two; in the central village the average is about 1.2 per household. Pigs are given special care and attention.



View of central village, Taira.



House and yard.

Preparing rice paddy.



Cultivating rice.



[p. 456-A]

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Women washing at water tank.

Women transplanting rice.

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Women transplanting.

Carrying wood.

[482]
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Children catching small fish.

Girls washing their laundry.



Boy harvesting.



Carrying water while their mother is recovering from giving birth.

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[296]
[415]

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[243]

TRAINING IN SKILLS

868 There are no complex systems of training in skills. Adults rely heavily on observation and imitation on the part of children; they seldom "teach" them to do things systematically. Parents were surprised and amused when questions such as "How do you teach children to transplant rice, harvest rice, or otherwise help in the fields?" were put to them. "We don't teach them; why they just learn by themselves," was the usual answer.

[852] Children learn by observing and experimenting. Whatever adults are doing, children are present to watch their activities and overhear their conversations. Although parents do not seem to make any special efforts to have a child attend a function so that he might learn adult ways, they take their children to the fields, parties, public meetings, and rituals long before they consider them ready to absorb any learning.

868 In the fields, children play among rows of vegetables. When a parent, grandparent, or older sibling stops for a rest to have a cup of tea, the little ones pick up a hoe and attempt to imitate their elders. While 857 rice is being transplanted, throngs of children sit on the dikes in the paddies, dangling their legs in the mud. They intently watch adults 243 transplanting and weeding the paddies. Gradually they edge down [264] into the mud to stamp with their bare feet in the ooze as they have seen adults do, until a warning shout arrests their educational water play. During the harvest season, groups of children carry mats out to the paddies and watch infants who need to be near their mothers for their feedings. While the infants sleep, the older children walk along the dikes, watching the work that is going on and clamoring to be of some help. Even a little child of kindergarten age stands by gloomily until an adult laughingly hands him a small bundle of rice sheaves to carry over to the threshing machine. By the time the child is 8, he has learned enough by watching to attempt cutting and tying small bundles of rice sheaves.

868 After the harvest, rice straw can be found in great quantities around the village. Some of the best straw is preserved to be made into rope. 283 If there are rainy days, men will sit and twist the rice straw into rope, [526] while 8- and 9-year-olds sit and watch. In a few days rope games and swings are in evidence everywhere. Little 4- and 5-year-olds stand by watching the older children, and soon they pick up stray bits of straw and twist them to no avail. A younger sibling whines as her move-

CHAPTER I: GEOGRAPHY

F. R. Pitts

131 Location Okinawa is a longish island, lying about halfway between Formosa and the southern tip of Kyushu. Together with clusters of islands lying both to the east and west, it forms the political unit known as Okinawa Gunto.

133 Along the axis of Okinawa, which trends from southwest to northeast, there is a fairly simple division into a plateau-and-mountain northern half, a central plateau area, and a low rolling southern knob. The Motobu peninsula juts westward from the northern, or Kunigami, half and forms a distinctive area. Between the Kunigami mountains and the peaks of Motobu lies the ricebowl of Okinawa---the Haneji lowland.

311 Arable Land In general it can be said that the farm population increases as one proceeds south. Map 2, showing the arable land under cultivation as a percentage of the total land area, illustrates this.¹

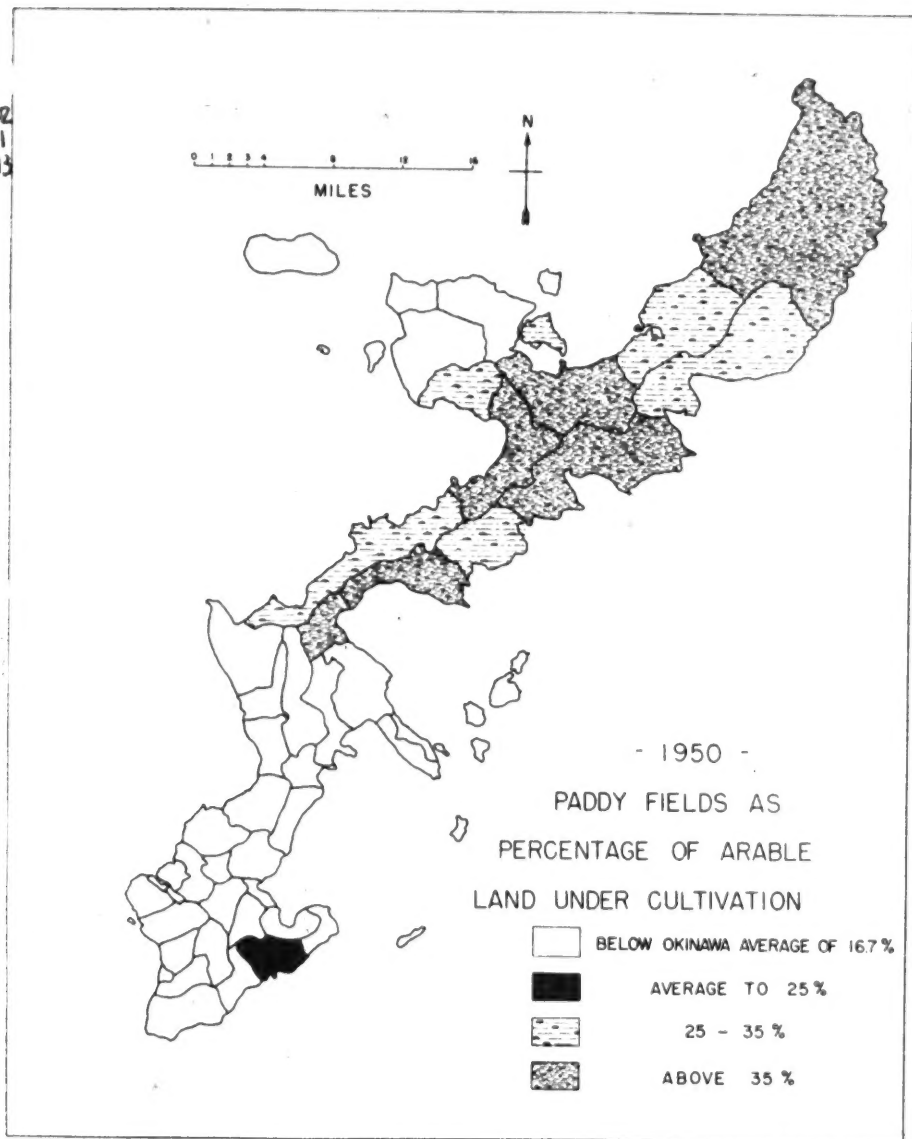
Farms in the mountain and plateau north are found in incised V-shaped valleys. Water is plentiful, and rice paddies cover the valley floor. Villages hug the edges of the flat land, and incredibly small sweet-potato terraces rise up the valley's edge. Atop the plateau one finds only silence, and a dense growth of trees and bamboo. Many of the people in the valleys are part-time foresters. The Motobu mountains guard from the frequent typhoons little settlements famed for growing the indigo plant and pineapples. The peninsula's north shore is a fertile but ever-narrowing extension of the Haneji lowland.

In the central plateau area---Nakagami---sweet-potato fields compete with scrubby forest for space on the plateau. Where sufficient water is available, rice fields cover the tiny valley floors and the low-lying coastal fringes. The triangular southern end of the island is known as Shimajiri in popular terminology. Shimajiri is blessed with the greatest concentration of fertile arable land on Okinawa. But the blessing is somewhat reduced by greater exposure to typhoons and a chronic water shortage. Sweet potatoes and sugar cane rank first among crops here.

311 Riceland Okinawans prefer to eat rice rather than sweet potatoes whenever possible. It is a paradox, however, that areas of greatest farm population grow the least rice. The thinly populated north has the greatest amount of riceland. Map 3 charts the distribution of riceland---or flooded fields---on Okinawa. Even in the southern 'son' of Yonagusuku and Kanagusuku flooded fields often contain the mat rush rather than rice. It is a good cash crop, and is sturdier than rice when typhoons roar through the islands.

[128] The figures upon which the maps in this section and the population section are based are found in Appendix A. The figures for Japan and Kagoshima-ken are given for comparative purposes. Of all the prefectures in Japan, Kagoshima most nearly resembles Okinawa in climate and emphasis upon sweet potatoes as a staple food.

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Map 3 A

[P 2-B]

1. [See pages 222-224 for data upon which this map was based--Analyst]

military competes with sugar as a primary cash crop, and cane fields are being converted back to rice paddies as fast as the farmer's resources permit. A more detailed discussion of the crop changes in the last two or three decades follows. 175
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Chronology of Change in Crops The major changes in crops revolve chiefly around the replacement of rice as a cash crop by sugar cane, and the later reversal of this situation. About fifty years ago, rice was the chief cash crop. It was rarely consumed in the home, but was sold in order to meet the monetary expenses of taxes, and to buy occasionally the new commodities that were beginning to appear in the markets. Then, not long after the Russo-Japanese war had ended, the price of black sugar jumped almost overnight from ¥8.50 to ¥64 for a 150-'kin' barrel. Everyone wanted to get a share of this boom in sugar, and most began to convert paddy land into 'hatake' for the growing of cane. They were stuck with the 'hatake' when the price fell after two months. The Japanese subsidized sugar later, however, and most of the land that had been converted remained sugar land. [654]

When the people began returning to their farms more than a year after the end of World War II hostilities, there was little market for sugar. The subsidy had gone with defeat, and providentially the sugar lands were available for the growing of more sweet potatoes. American canned food and sweet potatoes were the main items of diet until about 1949. Gradually farmers began to convert 'hatake' to paddy fields, and to grow rice again---this time less for sale than for home consumption. [262]
[177]

The old "bearded rice" varieties (*fijinē* and *mōdak3ja*) of the nineteenth century were replaced gradually by the shorter-statured but higher-yielding 'hōraimai'. The bearded rice, planted only once a year, had a yield of about one-third the present variety, and had only five or six stalks per plant. The twice a year modern variety yields more and has on the average fourteen to fifteen stalks per plant. As a result of the adoption of the two-crop variety, at least one traditional ceremony was abandoned. This was the *tantui*, in which the whole village participated before simultaneously planting their seedbeds. Before the war, two-thirds of Okinawa's rice requirements were imported.¹ Indicative of the postwar change to rice are the figures for area of paddy-fields in Kochinda-son; the 114,142 'tsubo' of paddy in February of 1948 had increased to 306,220 'tsubo' by September of 1952. Field investigation proved that conversion to paddy has proceeded at least as fast since 1952 as it did prior to that date. 175
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Before the First World War almost everyone in Nanahan raised forty to fifty 'tsubo' of millet. It was boiled with glutinous rice to make millet rice-cakes, or 'awamochi'. None is raised now. The same is true of cotton. "It grew only a foot high, but its fiber was very strong and would last a lifetime." Some other crops lasted into the post-war period. Until about 1950 textile bananas and yams were raised in Nanahan, but they both proved to be too weak in typhoons, and their cultivation was abandoned. 178
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[252]

¹ Summation....July-November 1946, p. 25.

In all cases, Kunigami seems to have held up the best, and Nakagami has fared the worst. Again this reflects the military interest of both the Japanese and the Americans. The comparison of 1904 acreage with that of 1950 in each of the three areas is shown below:

Table IV

Area	1904 Acreage		1950 Acreage		% Decrease	
	Paddy	Dry	Paddy	Dry	Paddy	Dry
Kunigami	6,530.5	28,398.5	5,463.0	20,773.8	16%	27%
Nakagami	3,861.2	34,176.1	1,675.1	14,932.0	57%	56%
Shimajiri	5,370.3	30,978.7	2,443.9	21,904.4	55%	29%
Okinawa Island ¹	15,719.1	93,952.6	9,589.0	57,610.2	39%	39%

Chronology of Changes in Farming Technique

It is impossible to give for the whole of Okinawa a schedule showing just when each technical innovation was introduced. Some parts of Shimajiri and Nakagami were in advance of the rest of the island; conversely, one finds on the outer islands practices still carried on that the more progressive areas abandoned more than two decades ago.

In Yamada the transplanting of rice was originally done by scattering (bara'ii) of the shoots. Shortly before 1930 this method was replaced by planting in rows, with a string to mark the distance. The spaces were filled in by planting while walking backwards. About 1950 people started transplanting while moving forward. This has been replaced in part---at least in areas where the mud is firm and clayey---by the planting frame, the 'waku'.

Farmers kept the harvested rice in conical stacks (majin) several feet high. The bundles (tabai) had the heads facing inward to prevent attack by rats. The number of these stacks was indicative of the farmer's prestige in the community. The sheaves were removed from the bottom layer always, and only when rice was needed for food.

Removal of the grain from the stalk was accomplished by the kūraishi. This was a pair of bamboo tongs held in the right hand, while the sheaf was drawn through the tongs with the left hand. When the new variety of rice was introduced, use of the kanabā became common. This iron-comb-like device, through which the sheaves were drawn one at a time, can still be found in use on the isle of Sesoko, off the Motobu peninsula. It apparently did not find

¹ The discrepancy in the 1904 totals for Okinawa Island and grand totals for the three division of the island is accounted for by 17.1 acres of paddy land and 256.7 acres of dry fields in Naha, and 142.6 acres of dry fields in Shuri.

It apparently did not find

- 178 widespread use in Tomoyose, for that village passed almost directly from the use
 243 of bamboo tongs to the rotary threshers, or 'dakkokki' (see photo). Yamada first
 412 saw this thresher about 1933, but Nanahan farmers began using it only in 1941.

[407]

Hulling of grain was in the past accomplished---as needed for home use
 178 or sale---by using a wooden rotary mill (see photos) called fichiūshi in Yamada
 252 and shiriūshi in Nanahan. In Yamada two women sat with their feet braced
 against it, and pulled straw ropes alternately. In Nanahan men did the hulling,
 and the rotary mill was lower but was three feet in diameter. In the late thir-
 ties motor-powered hulling mills were built in many areas, and farmers took
 their rice there for hulling and polishing.

Polishing of brown rice in Nanahan was accomplished until about 1935
 by use of a mortar, or chichiūshi (see photo), and pestle, or ajin. Most fami-
 lies still have these in reserve, as they were used after the war and were re-
 placed by rice mills only after 1949. People in remote areas still use them
 exclusively. Nowadays people have their rice hulled and polished in one opera-
 tion at a rice mill, if it is close at hand.

- 178 Very little wheat was grown in the three farm villages studied, but
 246 it was noticed that on the outer isles wheat was more dominant. On Henza isle,
 removal of the grain from the sheaf and hull was accomplished by rubbing it
 upon a piece of bump, limestone. On Kudaka, separation was by rubbing on a
 canvas, both with the hands and feet.

- 178 After the war farmers took advantage of the spread of the lantana bush,
 241 which had flourished due to the neglect of the land. It furnished an excellent
 livestock feed, and also a short pole which they could use in roofing their re-
 [342] built houses. Such poles, or kichigwā, had formerly been brought down from the
 forested north country.

- 178 Chronology of Change in Livestock Recovery of the land after the war pro-
 727 ceeded far more rapidly than replacement
 231 of the livestock killed or eaten in the invasion. The following table illus-
 trates the loss and slow recovery (except for swine) in livestock numbers:

Table V

Type of Livestock	1940 ¹	1946 ²	1952 ³	1952 as % of 1940
Cattle	22,000	112	6,837	31.0%
Horses	25,000	899	5,110	20.4%
Swine	108,426	1,165	107,077	98.8%
Goats	106,257	1,347	58,472	55.1%

In Kachinda-son the story has been somewhat the same, with the excep-
 tion that there are many more swine and cattle now than in the thirties. This
 is due partly to the lesser amount of land in sugar and the planting of more

1, 2 Summation....July-November, 1946, p. 26.

3 Ryūkyū tōkei hōkoku, Vol. 3, No. 3, 1943, p. 1. Valid as of 31 Dec. 1952.

APPENDIX "A"

- 128 This appendix contains figures upon which Maps 2 through 7 were based. List A is for Map 2, List B for Map 3, and so forth. The figures for Japan and Kagoshima are derived from the Japan Statistical Yearbook, 1950. All other figures are based on data in Ryūkyū tōkei hokoku.

311 List A Arable land under cultivation as a percentage of total land area.

- 291 The 31 December 1950 figures are used for area of arable land. Figures for total land area are for 31 December 1952. However, the calculation is valid as of the former date because the areas of political units did not change in the two years. The amount of arable land in Naha is negligible; the area for Tokashiki was not available in 'chō'.

311 List B Flooded fields (riceland) as a percentage of total arable land under cultivation, 1950.

- 243 The figures for Japan and Kagoshima are valid as of 1 August 1947. No acreage of riceland was reported from Ie Shima, Naha, Aguni, Minami Daitō or Kita Daitō.

161 List C Population density per square kilometer. The data for Japan and Kagoshima are valid as of 1 August 1948. The data for Okinawa Guntō are valid as of 31 December 1952.

List D Number of persons per acre of arable land under cultivation, 1950.

Data for Japan and Kagoshima are valid as of 1 August 1948. The census of persons in Okinawa Guntō was taken on 1 December 1950. The data on acreage of arable land under cultivation were reported 31 December 1950. Inasmuch as December is not a month when new land is reclaimed, the map and figures may be considered valid as of 1 December 1950. No figure is given for Naha because the acreage of arable land is negligible. No figure is given for Minami Daitō because of the great acreage planted to sugar cane. About 9,400 'tan' of the 11,000 'tan' of arable land there is in this crop.

List E Percentage of increase in population, 1940-1950. Data for Japan and Kagoshima are not available for those years. Data for Okinawa Guntō are valid as of 1 October 1940 and 1 December 1950. A minus sign (-) denotes a net decrease. At the time of the 1940 census, some political units were not separate, but were included in towns or cities nearby; therefore the 1950 figure of necessity includes both areas as one.

List F Percentage of increase in population, 1950-1952. Data for Japan and Kagoshima are not available for those years. Data for Okinawa Guntō are valid as of 1 December 1950 and 31 December 1952. The total percentage of increase in the 25 months was 5.55%—these percentages are reported on page 76 of Civil Affairs Activities in the Ryūkyū Islands. On the map any area with an increase of less than 5.55% and a decrease of less than 5% was considered an area of moderate emigration. Any area where the decrease exceeded 5% was considered as an area of excessive emigration. An area with more than 5.55% increase but less than 10% increase during that period was considered an area of moderate immigration. Areas in which the increase exceeded 10% are considered as having urban characteristics.

<u>Political Unit</u>	<u>List A</u>	<u>List B</u>	<u>List C</u>	<u>List D</u>	<u>List E</u>	<u>List F</u>	311
Japan	32.8	55.4	217.7	6.30	----	----	241
Kagoshima	19.2	37.5	225.5	5.14	----	----	243
Okinawa Guntō	15.7	16.7	424.6	12.40	22.8	8.9	161
Kunigami	3.1	36.7	57.1	9.58	20	-7.0	
Ōgimi	10.3	25.8	139.3	7.72	15	-3.8	
Higashi	5.9	33.8	487.6	8.27	11	-5.5	
Haneji	9.7	52.0	172.7	8.76	43	-2.0	
Yagaji	24.9	26.9	745.2	9.35		-20.5	
Nakijin	21.6	13.7	382.2	8.58	29	3.0	
Kamimotobu	28.4	4.2	579.7	10.20		-1.0	
Motobu	12.1	11.3	442.6	17.27	35	-5.8	
Yabu	9.8	29.4	258.6	10.77		-3.2	
Nago	7.7	46.0	371.2	19.38	45	15.0	
Onna	10.0	32.2	143.9	6.79	33	-2.1	
Kushi	4.2	47.2	55.6	7.72	36	-7.8	
Ginoza	10.9	25.3	170.1	7.88		-11.7	
Yin	9.5	35.0	175.1	8.21	56	-7.0	
Ie	24.0	----	281.9	5.84	-4	3.5	
Iheya	16.4	39.2	127.2	4.88	47	6.2	
Izena	36.1	40.8	505.9	4.63	9	3.7	
Ishikawa	15.7	37.3	977.0	26.90		4.9	
Misato	13.6	14.5	686.0	23.68	115	1.6	
Tonagusuku	35.1	7.3	699.4	14.12	55	7.1	
Katsuren	27.5	5.6	848.4	15.32	44	5.2	
Gushikawa	21.9	10.6	983.2	21.40	99	-1.2	
Goeku	3.7	16.0	861.7	89.50	128	13.3	
Yomitan	7.3	3.9	473.6	29.00	4	5.4	
Kadena	4.2	.4	562.3	46.75		19.2	
Chatan	.1	11.8	853.8	267.20	11	2.5	
Kitanakagusuku	16.0	8.8	700.5	19.43		2.1	
Nakagusuku	20.1	4.1	631.2	14.60	6	3.5	
Ginowan	21.9	9.3	926.0	17.92	24	5.8	
Nishihara	42.2	1.2	457.1	5.73	-21	10.2	
Urasoe	24.0	12.0	705.2	12.32	8	4.0	

	<u>Political Unit</u>	<u>List A</u>	<u>List B</u>	<u>List C</u>	<u>List D</u>	<u>List E</u>	<u>List F</u>
311							
241							
• 243	Shuri	23.9	.2	9393.9	59.1	14	9.5
161	Naha	----	----	10447.5	----	-33	14.4
	Mawashi	13.0	2.1	3605.6	71.5	83	15.8
	Oroku	11.1	2.0	1157.4	45.8	33	6.6
	Tomigusuku	41.7	9.7	490.4	6.36	1	-6.0
	Itoman	25.3	16.0	8927.5	231.5	116	10.2
	Kanegusuku	47.8	9.4	574.6	5.72	12	0.8
	Miwa	36.6	1.8	347.8	4.60	-13	7.1
	Takamine	30.2	8.1	389.4	5.84	- 8	2.5
	Kochinda	40.4	8.9	566.2	6.28	- 6	2.4
	Gushichan	38.3	15.5	480.0	5.90	- 5	0.4
	Tamagusuku	32.0	23.1	561.2	8.25	27	-2.2
	Chinen	29.3	14.2	589.3	10.20	28	1.6
	Seshiki	24.2	16.5	728.8	14.97	33	-3.2
	Yonabaru	20.0	.5	1541.5	34.9	- 5	16.3
	Uzato	38.0	11.5	544.1	6.60		
	Haeburu	56.3	4.0	693.9	5.57	-16	3.2
	Nakazato	17.3	39.0	213.1	6.31	24	-1.4
	Gushikawa	27.2	23.6	264.9	5.38	20	1.6
	Tokashiki	----	22.0	51.4	7.39	11	-10.9
	Zamami	8.4	18.7	99.6	6.74	-13	- 3.5
	Aguni	34.0	----	320.2	4.52	- 1	11.5
	Tonaki	27.1	1.3	264.5	7.39	64	- 1.0
	Minami Daitō	36.5	----	67.3	----		15.4
	Kita Daitō	26.4	----	39.4	1.21	-54	-14.0